REMARKS

In the Office Action, the Examiner rejected claims 1, 2, 8, and 9 under 35 U.S.C. §102(b) as being anticipated by either the Ford patent or the Sanders patent.

The Ford patent discloses, in Figure 2, a cathode 20 and an anode 24. The cathode 20 is sealed to a block 22, and the anode 24 has a different voltage from the cathode 20. The mirrors and mounting frame of the block 22 are grounded, and the anode 24 is connected to ground through a load resistor. The gas passages in the block 22 have a potential gradient between the cathode voltage and the anode voltage that creates an electric field 26 in the block 22. Lithium oxide in the block 22 is dissociated into lithium ions and oxide ions. The lithium ions drift toward the cathode 20.

Therefore, a current travels along the path between the cathode 20 and the anode 24. As a result, a layer of lithium-rich material is produced at the surface of the cathode 20. The layer of lithium-rich material is brittle, shortening the life of the gyroscope. As disclosed in the Ford patent, any reduction in this

migration of lithium material should significantly improve gyroscope life.

The solution disclosed in the Ford patent is to add a dielectric barrier 40 between the cathode and the block. In view of the dielectric barrier 40, an electric field still exists in the block. However, because the majority of the electric field occurs in the dielectric barrier 40 and not in the block 22, lithium migration is blocked.

The Ford patent does not disclose setting the potentials of the cathode and anode as recited in independent claims 1 and 8. Indeed, the Ford patent does not expressly disclose a polarity for the potential of the cathode or a polarity for the potential of the anode.

However, the Ford patent does disclose that the potential between the cathode and the anode causes lithium ions to migrate toward the cathode, where the lithium ions are neutralized by electrons. Therefore, this disclosure suggests that, because the lithium ions are neutralized by electrons, the lithium ions are positively charged. This disclosure further suggests that, because the lithium ions migrate toward the cathode, the cathode is negatively charged in order to cause the positively charged lithium ions to migrate

toward the cathode. Accordingly, the Ford patent suggests that the cathode has a negative potential.

Because the cathode has a negative potential, the potential of the cathode cannot be higher that the reference potential. Accordingly, the Ford patent does not teach or suggest the invention of independent claims 1.

Moreover, the Ford patent further discloses that the anode is connected to ground through a load resistor. Therefore, the anode is either at ground or a potential that is between ground and the cathode. Either way, the anode does not have a higher potential than the reference potential while the cathode has a lower potential than the reference potential. Accordingly, the Ford patent does not teach or suggest the invention of independent claims 8.

Consequently, independent claims 1 and 8 are not unpatentable over the Ford patent.

Because independent claims 1 and 8 are patentable over the Ford patent, dependent claims 2 and 9 are likewise patentable over the Ford patent.

The Sanders patent discloses a passive ring resonator gyroscope 10 having a block 28 supporting and anode 80 and a cathode 82. The Examiner points to column

4, line 59 through column 5, line 8 of the Sanders patent for a teaching of independent claims 1 and 8.

Column 4, line 59 through column 5, line 8 of the Sanders patent discloses a current source block 28 powered from a voltage source such as V+ with respect to a reference potential such as ground. The current source block 28 has a current source terminal 81 coupled to the anode 80 and a return terminal 83 coupled to the cathode 82 such that a controlled current is coupled from the current source terminal 81 to the anode 80, through the gain medium (not shown) to induce lasing, to the cathode 82, and then to the current source return terminal 83.

It is noted that this portion of the Sanders patent does not yet disclose the relative potentials of the block, the anode 80, and the cathode 82. However, this portion of the Sanders patent goes on to disclose that, in a typical Helium-Neon laser, it is customary to reference the anode 80 to a potential at or near ground and to drive the cathode from a high negative potential source.

Therefore, the Sanders patent does not disclose maintaining a block at a reference potential, biasing a cathode at a higher potential than the reference

potential, and biasing an anode at a higher potential than the cathode, as required by independent claim 1.

Moreover, the Sanders patent does not disclose maintaining a block at a reference potential, biasing a cathode at a lower potential than the reference potential, and biasing an anode at a higher potential than the reference potential, as required by independent claim 8.

Therefore, column 4, line 59 through column 5, line 8 of the Sanders patent does not disclose the inventions of independent claims 1 and 8. Consequently, independent claims 1 and 8 are patentable over the Sanders patent.

Because independent claims 1 and 8 are patentable over the Sanders patent, dependent claims 2 and 9 are likewise patentable over the Sanders patent.

CONCLUSION

In view of the above, the claims of the present application patentably distinguish over the art applied by the Examiner. Accordingly, allowance of these claims and issuance of the present application are respectfully requested.

Respectfully submitted,

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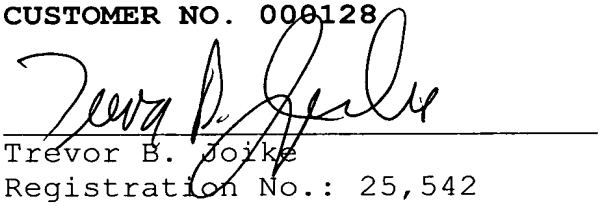
By: 

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